

Questions and Further Clarifications Needed for Asbestos Use in Chlor-alkali Plants

Receipt of Asbestos and Fabrication of Diaphragm

1. What kind of container is the raw asbestos imported in? SeaLand Container. What are the procedures across the supply chain for all asbestos that enters the country for use in the Axial-Westlake chlor-alkali plant? According to chlor-alkali industry information, chrysotile-containing asbestos used in the fabrication of diaphragms is imported in sealed containers, with the asbestos in 40-50 kg sealed bags made of dust-proof, woven plastic. (EPA Document# EPA-740-R1-7008). This has been verified to be true on our site.
2. Do shipping containers ever require a customs inspection that would open the containers? The Axial/Westlake trade compliance group has not experienced, been notified of, learned of or observed any customs inspection of asbestos shipping containers.
3. If a shipping container is damaged, what warning is available to the port or warehouse personnel? There are no warning signs on the container. However, the shipping documentation has content description. Does the warehouse belong to the facility or a third-party? Third Party.
4. How is the raw asbestos contained within the shipping container? What type of bags are used? "Typically, they [chlor-alkali facilities] indicated that 20 bags are placed on a pallet at the point of shipment and the pallet is covered completely by a heavyweight wrap – durable and similar in thickness to a drum liner. The pallets are placed in a shipping container, which gets sealed with a heavy-duty bolt-type seal." (EPA Document# EPA-740-R1-7008) This was verified to be consistent for the practices at our site.
5. How is material transported to the chlor-alkali facility? It remains inside the SeaLand container. At the port of entry, the shipping container is marked and transported to our facility.

Fabrication of Diaphragm

6. How are the asbestos bags transported from inside the shipping container to a storage room (what devices, processes, equipment such as forklifts, pallets, etc.)? A forklift is used to transport a wrapped pallet of materials to the storage room. How is an accident cleaned-up and asbestos-containing material disposed of, including containers and storage areas? Personnel don supplied air respiratory protection, the area is barricaded and asbestos warning signs placed around area. The materials are wetted and shoveled into asbestos disposal bag(s). The bags are sealed, double bagged, labeled and disposed into an asbestos dumpster.
7. Once the shipping container is opened, how often is a broken bag present? Axial/Westlake's Plaquemine facility has reportedly never discovered a broken bag within the asbestos shipping

container. Is the entire content disposed? Describe the cleanup procedure for each facility. See question 6.

8. How are the asbestos storage areas ventilated (e.g. under negative pressure) and is the ventilation monitored with alarms? The storage room is ventilated through negative pressure pulling through the glove box. There are no audible alarms on the ventilation, but it is monitored for proper operation. In the event of a failure, a red indicator light alerts personnel. Additionally, a negative pressure gauge is present for verification. What other storage processes are in place? Asbestos is also stored within SeaLand containers on our site.
9. How are the bags opened? Specifically, are they moved into a glove box (in all cases) before opening? Please provide the breakdown of how bags are handled (manual or mechanical) prior to putting asbestos into the mixing vessel and any tools used to cut open the bag. Please include information on any relevant engineering controls.
 - ☐ In all cases, bags are moved into a glove box before opening. The glovebox is inside the asbestos storage room, which maintains negative pressure. The sealed bag is carried manually to the glove box, placed inside and closed. The bag is then cut open with a box cutter. The asbestos material is broken up by hand (using glovebox gloves) and placed into the chute (inside glovebox) to mixing vessel.
10. If bags are not opened in a glove box, are they opened in an area with ventilation designed for that purpose? If yes, please explain. What tools are used? Describe the work process to cut open the bags. All bags are opened within a glovebox.
11. Are glove boxes pre-fitted with HEPA vacuum wands for cleaning bag surfaces? No. How are asbestos bags handled and stored if only partial bags are needed/used? Partial bags are sealed within an asbestos disposal bag and stored within the glovebox.
12. How are empty asbestos bags handled at every site? All empty bags are disposed within the glovebox.
13. Regarding the wet asbestos in and around the mixing (or deposition) tanks that is removed before it dries, how quickly does it dry? Wetted asbestos typically would take 2-3 days to dry out. What equipment is used to clean it up? How is that equipment managed? Is an SOP available for cleaning? A water hose is used for cleanup and general cleaning of the area. All wash water goes to the sump and ultimately to the filter press. While the Plaquemine facility uses this standard practice for cleaning, it has no formal, documented SOP for cleaning.
14. What asbestos control processes are used in the diaphragm drying area and baking oven/oven room? Ventilation? Cleaning SOP? Diaphragm is vacuum dried and sides are rinsed clean prior to entry into oven. Oven exhausts outside building with visual inspection. The Plaquemine facility has no formal, documented cleaning SOP.

Handling of Spent Diaphragms

15. Is the hydro-blasting area contained? Yes. What measures are in place to ensure that all asbestos wastes generated during the hydro-blasting are captured? All floor space is designed to drain to the asbestos sump. The hydroblasting area is washed down after each cell is cleaned. The entire building is washed down daily using a low pressure hose.
16. Is the spent diaphragm dry or wet during hydro-blasting? Wet
17. Do personnel perform the hydro-blasting or is that completely automated? Personnel. Do personnel ever enter the hydro-blasting room? Yes, personnel are in the room to perform the hydroblasting work. If yes, do they allow time between hydro-blasting and entering the room? Not Applicable, as personnel are performing the hydroblasting work. Other employees are restricted during hydroblasting activities. How is the hydro-blasting room cleaned after use? See question 15.

Breathing Zone and Environmental Monitoring

18. Please provide any additional available details for the asbestos personal monitoring information. Please include: description of job tasks/titles, number of workers monitored, ranges of values collected, time duration for each task and the 8-hr time-weighted averages for each sample. Please clarify that the information provided represents all measured values and includes all job titles of employees who may be exposed to asbestos. Regular air monitoring has been performed on operations personnel and cell renewal employees (contractors). All positions with potential asbestos exposure are evaluated. See attached sampling results.
19. Please provide any additional area air monitoring results for any (or all) steps in the asbestos use process not already provided that are available. Included above.

Handling of Wastes and Effluent

20. Does the facility monitor for asbestos in effluents from hydro-blasting diaphragms? No. All asbestos waste and effluent is captured and contained within the asbestos sump and filter press.
21. Is 100% of the water and wetted asbestos (effluent) captured and sealed as waste? Or does any liquid from the hydro-blasting process go down a drain? All asbestos waste effluent is captured and contained within the asbestos sump and filter pressed. The filtered water is discharge following LPDES permit requirements.
22. If any effluent goes down a drain, where does the drain lead and (how) is it treated before leaving the site? Is the facility an indirect discharger or direct discharger? Direct. If indirect discharger, does the facility have a pretreatment program? Describe any onsite treatment methods how settled solids and/or biosolids are handled for each facility. All asbestos waste

effluent is captured and contained within the asbestos sump and filter press. Filtered water is discharged following LPDES permit requirements.

23. How are ventilation systems serving asbestos handling areas maintained? How is ventilated air containing asbestos handled? Describe air pollution control devices and how captured asbestos/dust/particulates are handled. For example, if filters are used – what types, how are they inspected, cleaned and serviced? Are the filters recharged or discarded/changed-out? The exhaust air goes through a water scrubber prior to being vented to atmosphere. There is a baffle box with spray system to knock particulates and fibers from the air. The scrubber system liquid is drained periodically to the asbestos sump and filter press.
24. How are the spent diaphragms and/or ventilation system filters disposed? Diaphragms are sent to filter press as is the water from the scrubber.
25. What is the facility's National Pollutant Discharge Elimination System (NPDES) permit number(s), Title V air permit number(s), and Resource Conservation and Recovery Act (RCRA) identification number? What is the status of each permit (e.g., active, expired)?
- ☐ NPDES - LA0007129 – Expired but in renewal
 - ☐ Title V
 - i. 2030-V2, Active, Exp. 6/29/2021
 - ii. 2032-V2 6/29/21
 - iii. 2056-V3 6/29/21
 - iv. 1267-V3 6/29/21
 - v. 881-V6 8/14/20
 - vi. 2907-V2 1/5/17 (renewal application submitted 7/1/16)
 - vii. 2906-V4 6/29/21
 - viii. 2224-V2 12/8/16 (renewal application submitted 6/8/16)
 - ☐ RCRA - LAD 057117434, Active
26. How are asbestos containing wastes managed/stored on site until it is sent off site? What procedure is in place to ensure that asbestos waste is clearly labeled and sealed to prevent exposure and release? All asbestos containing wastes are kept in a labeled, covered dumpster and wetted periodically until sent off site for proper disposal.
27. How is portable equipment which may come in contact with asbestos, such as pumps and vacuums, labeled and maintained? Visual inspection is performed prior to usage and following decontamination. Vacuums are bagged into asbestos labelled bags.

Housekeeping and Hygiene

28. Does all work at the facility involving asbestos occur in restricted areas? Yes. Or do employees without asbestos duties have access to some areas where asbestos is used in the process? If yes, please explain. Signs restricting access

29. If dry asbestos cleanup is by HEPA vacuum, how is the vacuum cleaned and its bag/filter media handled? Where does this take place? What precautions or controls are used? Is an SOP available? This activity occurs in the asbestos storage room with negative pressure ventilation. There is no written SOP specifically for this task, but the common practice involves removal and disposal of bag/filter, decontamination of the exterior surfaces of the vacuum (wet wiping) and bagging the vacuum into asbestos labelled bags for storage.
30. Please describe the process and equipment used to clean up loose (inadvertently released or spilled) asbestos using wet methods. How is water applied? A water hose is used to wash all areas down to the drain system. Is the water amended? No. If water is sprayed, what pressure and volume is used? Low pressure water from 2" hose.
31. Are wet filter press cakes manually dropped into bags; does a bag hold more than one filter press cake? Dropped into lined dumpster. If so, what exposure control methods are used as new cakes are dropped onto cakes already drying in the bag? Previous filter cakes are rewetted periodically and prior to dropping new cake. What cleaning in and around the filter area is required and how is that accomplished? The filter area is a containment area allowing wash-down of filter press, which is performed following usage with a low pressure water hose.
32. What are the standards for cleanliness in storage, work areas, and hygiene/change rooms; how is cleanliness determined? Supervisor inspection. Cleaning is performed in all areas on a daily basis. Are there SOPs for maintaining and inspecting these areas? None
33. How are employee change rooms designed to maintain integrity of clean areas and clean clothes? Clean room with lockers are partitioned from showers which are partitioned from dirty room.
34. What procedures do personnel use to decontaminate their PPE and equipment? PPE is washed with soap and water.
35. How is the asbestos removed from PPE disposed? All disposed materials and asbestos are double bagged and disposed in lined dumpster.

Training

Are there initial training courses and refresher training courses for working with asbestos? What specific information is included in each training course and are there requirements for the refresher training (i.e., employees cannot work unless completed)? Is training provided for procedures required in case of accidental spills or releases? Yes training is required and provided to all asbestos workers. They are required to take the 32 hour Worker Training approved by the State of Louisiana and EPA (Under TSCA Title II) and an 8-hour Worker Refresher annually. Supervisors take the 40-hour Contractor/Supervisor training and 8-hour annual refresher course.